

4. The method of claim 1 wherein the determining step comprises determining a difference between the electrical effects received from at least two electrodes.

5. The method of claim 1 wherein the determining step comprises comparing the electrical effects to previously-determined baseline effects.

6. The method of claim 1 wherein the position-based attribute corresponds to a position of the object with respect to the plurality of electrodes.

7. The method of claim 1 wherein the position-based attribute describes a motion of the object with respect to the plurality of electrodes.

8. The method of claim 1 wherein the position-based attribute describes a change in position from a previous value.

9. The method of claim 1 wherein the position-based attribute describes a velocity of the object.

10. The method of claim 1 wherein the position-based attribute describes an acceleration of the object.

11. The method of claim 1 wherein each of the plurality of distinct digital codes are substantially orthogonal.

12. The method of claim 1 wherein each of the plurality of codes is a substantial portion of a code derived from a maximum length shift register sequence.

13. The method of claim 1 wherein at least some of the plurality of distinct digital codes are selected to avoid the effects of noise in the sensed signals.

14. The method of claim 1 further comprising the step of generating each of the plurality of distinct digital codes.

15. The method of claim 14 wherein the generating step comprises producing the plurality of distinct digital codes using at least one shift register.

16. The method of claim 1 wherein the modulation signals are applied substantially simultaneously for at least two of the plurality of electrodes.

17. The method of claim 1 wherein the demodulating step comprises receiving at least two of the sensing signals from the sensing region on a common signal path.

18. The method of claim 1 wherein the electrical effects result from an electrical coupling between the object and at least some of the associated electrodes.

19. The method of claim 18 wherein the electrical coupling is a capacitive coupling.

20. The method of claim 18 wherein the electrical effects are obtained from an integrating capacitor coupled to at least two of the plurality of electrodes.

21. The method of claim 1 further comprising the steps of:

producing each of a plurality of complementary modulation signals as a function of complements of the plurality of distinct digital codes; and

applying each of the complementary modulation signals to the associated at least one of the plurality of electrodes to obtain a plurality of complementary sensed signals.

22. The method of claim 21 further comprising the steps of:

demodulating each of the plurality of complementary sensed signals using the distinct digital code associated with the at least one of the plurality of electrodes to thereby identify complementary electrical effects from the plurality of electrodes; and

comparing the electrical effects with the complementary electrical effects to thereby perform dual differential conversion.

23. The method of claim 1 further comprising the step of adjusting the distinct digital code subsequently applied to at least one of the plurality of electrodes in response to the plurality of sensed signals.

24. The method of claim 1 further comprising the step of adjusting at least one of the distinct modulation signals in response to the sensed signals.

25. The method of claim 1 further comprising the step of processing the resultant signal to obtain information about a second object in proximity to the touch-sensitive region.

26. The method of claim 25 wherein the object and the second object are separate parts of a human hand.

27. The method of claim 25 further comprising the step of rejecting information relating to the second object.

28. The method of claim 1 wherein the determining step comprises defining an image of the object.

29. The method of claim 28 wherein the image represents a two-dimensional topography of the object projected upon the touch-sensitive region.

30. The method of claim 28 further comprising the step of processing the resultant signal to obtain information about a second object in proximity to the touch-sensitive region, the second object having a second image.

31. The method of claim 30 further comprising the step of tracking movements of the image and of the second image with respect to the touch-sensitive region.

32. The method of claim 30 further comprising the step of determining whether the second image represents an undesired input, and if so, rejecting the second image.

33. The method of claim 1 wherein the distinct digital codes have more than two states.

34. The method of claim 1 wherein the step of producing the plurality of unique modulation signals comprises amplitude modulating a carrier signal with each of the plurality of distinct digital codes.

35. The method of claim 1 wherein the plurality of electrodes comprises a first plurality of electrodes having a first orientation and a second plurality of electrodes having a second orientation.

36. The method of claim 35 wherein each of the plurality of unique modulation signals are applied to the first plurality of electrodes and received via the second plurality of electrodes.

37. The method of claim 35 further comprising the step of applying a guard signal to at least one inactive electrode of the second plurality of electrodes.

38. The method of claim 1 wherein the applying step comprises applying at least one of the unique modulation signals to at least two of the plurality of electrodes.

39. A touch-sensitive device for detecting a position-based attribute of an object, the device comprising:

a touch-sensitive region comprising a plurality of electrodes having electrical characteristics configured to be affected by the proximity of the object;

drive circuitry associated with each of the electrodes;

a demodulator coupled to the touch-sensitive region; and

a processor coupled to the drive circuitry and to the demodulator, wherein the processor is configured to initiate production of a plurality of modulation signals